

REMARKS/ARGUMENTS

Reconsideration of the application is respectfully requested for the following reasons:

Rejection of Claims 17-21 Under 35 U.S.C. §102(b)

Claims 17-21 are rejected under 35 U.S.C. §102(b) as being anticipated by Kimura et al. (US 5,739,552). Applicants respectfully traverse this rejection since Kimura et al. fail to disclose every element of the claimed invention. Particularly, Kimura et al. fail to disclose a transparent layer having Zn dopants therein on said GaP layer of said LED substrate, said transparent layer is composed of a semiconductor compound excluding GaP. Examiner suggests that the p type Zn-doped GaP layer 11 and the p type GaP substrate 10 of Kimura et al. are identical to the GaP layer and the transparent layer of the claimed invention respectively. However, the p type Zn-doped GaP layer 11 and the p type GaP substrate 10 of Kimura et al. are both composed of semiconductor compound GaP. Moreover, Examiner suggests that the p type Zn-doped GaP layer 11 and the p type GaP substrate 10 of Kimura et al. have different semiconductor compounds because the GaP layer 11 has Zn dopants. This suggestion is unreasonable and violates basic principles of material science, semiconductor acknowledge and

chemistry since dopants in semiconductor compound will not be a part of the molecules of the semiconductor compound and they are impurities between the molecules of the semiconductor compound. Dopants either by implanting or other methods into semiconductor compound could not be possibly a part of the crystal structure of the molecules of the semiconductor compound. They only partially break the crystal structure of the molecules of the semiconductor compound and disperse therein to provide electrons or holes as carriers. Any one with ordinary skill in the art would never treat a Zn-doped GaP layer as a ZnGaP layer or a GaPZn layer. Therefore, the p type Zn-doped GaP layer 11 and the p type GaP substrate 10 of Kimura et al. are actually composed of the same semiconductor compound GaP. Thus, Kimura et al. actually fails to disclose every element of the claimed invention. According to MPEP § 2131 Anticipation — Application of 35U.S.C. 102(a), (b), and (e) [R-1] TO ANTICIPATE A CLAIM, THE REFERENCE MUST TEACH EVERY ELEMENT OF THE CLAIM. “A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). Thus the teaching Kimura et al. is insufficient to render claims 17, 19-21 unpatentable.

Claims 22-25 are also rejected under 35 U.S.C. §102(b) as being anticipated by Kimura et al. Applicants respectfully traverse this rejection since

Kimura et al. fail to disclose every element of the claimed invention. Particularly, Kimura et al. fail to disclose a transparent layer composed of a semiconductor compound excluding GaP having Zn dopants therein on said GaP layer. Examiner suggests that the p type Zn-doped GaP layer 11 and the p type GaP substrate 10 of Kimura et al. are identical to the GaP layer and the transparent layer of the claimed invention respectively. However, the p type Zn-doped GaP layer 11 and the p type GaP substrate 10 of Kimura et al. are both composed of semiconductor compound GaP. Moreover, Examiner suggests that the p type Zn-doped GaP layer 11 of Kimura et al. is a non-GaP transparent layer. This suggestion obviously violates the original teaching of Kimura et al. and it is quite unreasonable to treat a Zn-doped GaP layer as a non-GaP transparent layer since a non-GaP transparent layer should be a layer not composed of GaP. This suggestion is unreasonable and violates basic principles of material science, semiconductor knowledge and chemistry since dopants in semiconductor compound will not be a part of the molecules of the semiconductor compound and they are impurities between the molecules of the semiconductor compound. Dopants either by implanting or other methods into semiconductor compound could not be possibly a part of the crystal structure of the molecules of the semiconductor compound. They only partially break the crystal structure of the molecules of the semiconductor compound and disperse therein to provide electrons or holes as carriers. Any one with ordinary skill in the art would never


treat a Zn-doped GaP layer as a ZnGaP layer or a GaPZn layer. Therefore, the p type Zn-doped GaP layer 11 and the p type GaP substrate 10 of Kimura et al. are actually composed of the same semiconductor compound GaP. Thus, Kimura et al. actually fails to disclose every element of the claimed invention according to MPEP § 2131. Thus the teaching Kimura et al. is insufficient to render claims 22-25 unpatentable.

Conclusion

In light of the above remarks to the claims, Applicant contends that Claims 17, 19-25 are patentable thereover. The claims are in condition for favorable consideration and Applicant respectfully requests that a timely Notice of Allowance be issued in this case.

This Amendment was prepared by Applicant, and is being submitted without substantive change by the undersigned Attorney.

Respectfully submitted,
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